

3. (Amended) The method of claim 1, wherein the signal amplification reagent comprises a DNA matrix.

6. (Amended) The method of claim 1 wherein at least one of the receptor and the signal amplification reagent comprises a detectable label; and wherein step d) comprises detecting the label.

7. (Amended) The method of claim 1 further comprising labeling at least one of the receptor and the signal amplification reagent with a detectable label prior to step d); and wherein step d) comprises detecting the label.

8. (Amended) The method of claim 1 wherein the method further comprises, after step c), and before step d), the step of contacting the signal amplification reagent, comprising a plurality of the binding ligands, with labeled receptor molecules thereby to complex a plurality of labeled receptor molecules to the signal amplification reagent; and wherein step d) comprises detecting the labeled receptor molecules complexed to the signal amplification reagent.

12. (Amended) The method of claim 1, wherein the signal amplification reagent comprises an antibody capable of specifically binding the receptor.

15. (Amended) The method of claim 11, wherein the signal amplification reagent comprises a DNA matrix comprising single stranded DNA; and wherein biotin is attached to the DNA matrix by hybridization of a plurality of biotinylated nucleic acids to single strands of the DNA matrix.

23. (Amended) A method for detecting a nucleic acid target, the method comprising:  
a) providing a substrate comprising a surface, the surface comprising at least 100 nucleic acid probes, each nucleic acid probe contained in an area of less than about 0.1 cm<sup>2</sup>, and each nucleic acid probe having a defined sequence and location on the surface;  
b) contacting the surface with a nucleic acid target, comprising a target nucleic acid sequence, to permit the nucleic acid target to hybridize with at least one selected nucleic acid

probe that comprises a probe nucleic acid sequence capable of hybridizing to the target nucleic acid sequence, and wherein the target comprises a binding ligand;

c) contacting the hybridized target with a receptor comprising multiple sites capable of binding the binding ligand to complex the receptor to the binding ligand;

d) contacting the receptor with a signal amplification reagent, comprising a plurality of the binding ligands, to complex the signal amplification reagent to the receptor; and

e) detecting the presence of the complexed signal amplification reagent.

26. (Amended) The method of claim 23, wherein the signal amplification reagent comprises a DNA matrix, the binding ligand comprises biotin and the receptor comprises streptavidin.

27. (Amended) The method of claim 26, wherein the binding ligand comprises biotin, the receptor comprises streptavidin and the signal amplification reagent comprises an anti-streptavidin antibody.

28. (Amended) A complex comprising:  
a nucleic acid comprising a binding ligand;  
a receptor comprising multiple binding sites capable of binding the binding ligand; and an signal amplification reagent comprising a plurality of said binding ligands.

30. (Amended) The complex of claim 29, wherein the signal amplification reagent comprises a DNA matrix.

31. (Amended) The complex of claim 29, wherein the signal amplification reagent comprises an anti-streptavidin antibody.

34. (Amended) The substrate of claim 33, wherein the signal amplification reagent comprises a DNA matrix.

35. (Amended) The substrate of claim 33, wherein the signal amplification reagent comprises an anti-streptavidin antibody.